



Marketing Technologies

Section G

Introduction

The purpose of marketing Air Force technology transfer successes or transfer opportunities is to identify and link with potential partners, which includes industry, academia and other government organizations. It is the responsibility of the technology owner and the local technology transfer focal point to market the technology.

Overview

Marketing of research and development programs is a major endeavor for Air Force organizations that is necessary for economic well being because it helps ensure a stronger nation due to the benefits that technology transfer produces.



Marketing helps build and sustain relationships and partnerships with other services, industry, public sector agencies, academia, and other federal agencies. Activities include publicizing the technology through advertisements, technical articles, brochures, program tri-folds, announcements, the internet, direct mailings, exhibits at conferences and trade shows, and direct contacts with potential partners.

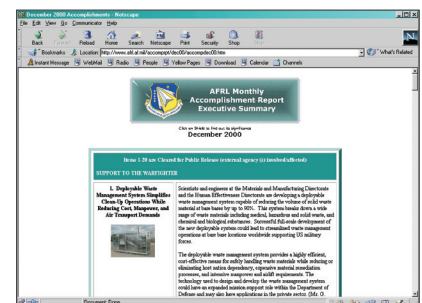
The marketing focus concentrates efforts on specific target groups of potential outside partners. It usually takes a specific technology or family of technologies and advertises them directly to those non-Air Force entities who have a high potential for interest, need, or use of the technology.

In-House AFRL HQ Marketing Team

The AFRL Corporate Communications

Branch (AFRL/XPTC) is responsible for publicizing the success of AFRL corporate science and technology programs such as Dual Use Science and Technology (DUS&T), Independent Research and Development (IR&D), Small Business Innovation Research (SBIR) and Technology Transfer. *AFRL Technology Horizons* magazine (Figure G1) is a tool for sharing AFRL technology research with the laboratory's technical peers in government, industry and academia. Since the distribution exceeds 120,000, Horizons offers the strongest potential to reach the widest audience. Transfer focal points are strongly encouraged to submit technical articles for publication. The focus for this magazine is on marketable technologies and research conducted within the AFRL Technology Directorates and the Air Force Office of Scientific Research (AFOSR). The magazine's marketing theme is to increase overall public awareness of AFRL technology by targeting wide technical audiences, including industry, academia and other government agencies as potential partners. To view an electronic version of AFRL Technology Horizons click on <http://www.afrlhorizons.com>. Other marketing tools used by AFRL/XPTC include brochures, videos, exhibits, program fact sheets and posters, Success Stories (Atch G1, G2), and the Monthly Accomplishment Report which actively tells the Air Force Science and Technology story in near real-time through the collection and distribution of technical accomplishments. Current and archived Monthly Accomplishment Reports can be accessed at <http://www.afrl.af.mil/accomprpt/index.htm>.

All these marketing tools provide an opportunity to advertise successful transfer or technologies available for transfer. Each technology directorate and AFOSR have focal points who work directly



with the XPTC Corporate Communications Branch.



Scientists and engineers who wish to market their research or technologies for transfer may contact XPTC for identification of potential marketing tools and/or to be connected with

their directorate's marketing focal point.

The Air Force Technology Transfer Management Team (XPTT) within the Technology Transfer and Corporate Communications Division (AFRL/XPT) assists Air Force transfer focal points by coordinating and integrating marketing efforts at the higher headquarters level. The team recently developed a tri-fold detailing the technology transfer process (*Figure G2*) which can be electronically accessed at <http://www.afrl.af.mil/techtran/techtran-trifold.pdf>. Other marketing tools, such as reports, articles, photos, models, and videos are available through local technology transfer focal points.

Electronic Marketing

A major marketing tool for the Air Force Technology Transfer Management Team is the internet. From this site, <http://www.afrl.af.mil/techtran/index.htm>, information ranging from Department of Defense and Air Force Directives and Instructions

(Section B) updates to Contact Data for Organizational Focal Points (Section P) can be found. This handbook and the tri-fold are also listed at this site as easy electronic reference tools. Updates between publications can be loaded in a matter of minutes (upon completion of the normal clearance requirements for posting any Air Force material on the internet).

Success Stories

A major contributor to any good marketing strategy is the success story. The success story provides the Air Force organization an opportunity to

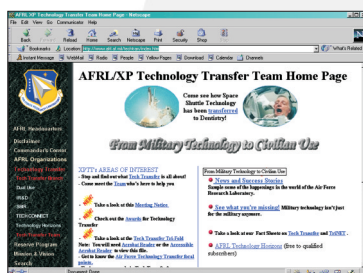
showcase its technologies. Included in the success story are the technology transfer mechanism used, the number assigned, the partners involved, and a brief description detailing benefits for the Air Force and the partner. This is also an opportunity to mention professional awards received by the scientist, engineer, or team involved in the successful transfer of technology.

CRADA Fact Sheets

When a CRADA is signed and executed and also when it is terminated or completed, the technology transfer focal point submits a Fact Sheet cleared by the Public Affairs office to AFRL/XPTT. The examples in Attachments G3 and G4 are provided by the AFRL Materials and Manufacturing (AFRL/ML) and the AFRL Munitions (AFRL/MN) Directorates.

Public Affairs

The Air Force Research Laboratory Public Affairs office is responsible for external and internal communication efforts leading to greater publication of technology transfer initiatives within the Air Force. The AFRL online newsletter provides quarterly news and feature articles to the internal Air Force audience and American public via the public web site. Included in these articles are AFRL technology transfer success stories reaching an unlimited public. The external communication efforts include promoting technology transfer opportunities and successes to the local, national and international news media via news releases, interviews, news and feature stories and more. Media interaction provides greater opportunities for publication as stories reach national audiences within hours of publication or air time and get highlighted by other media teams world-wide for in-depth features on the technology applications.



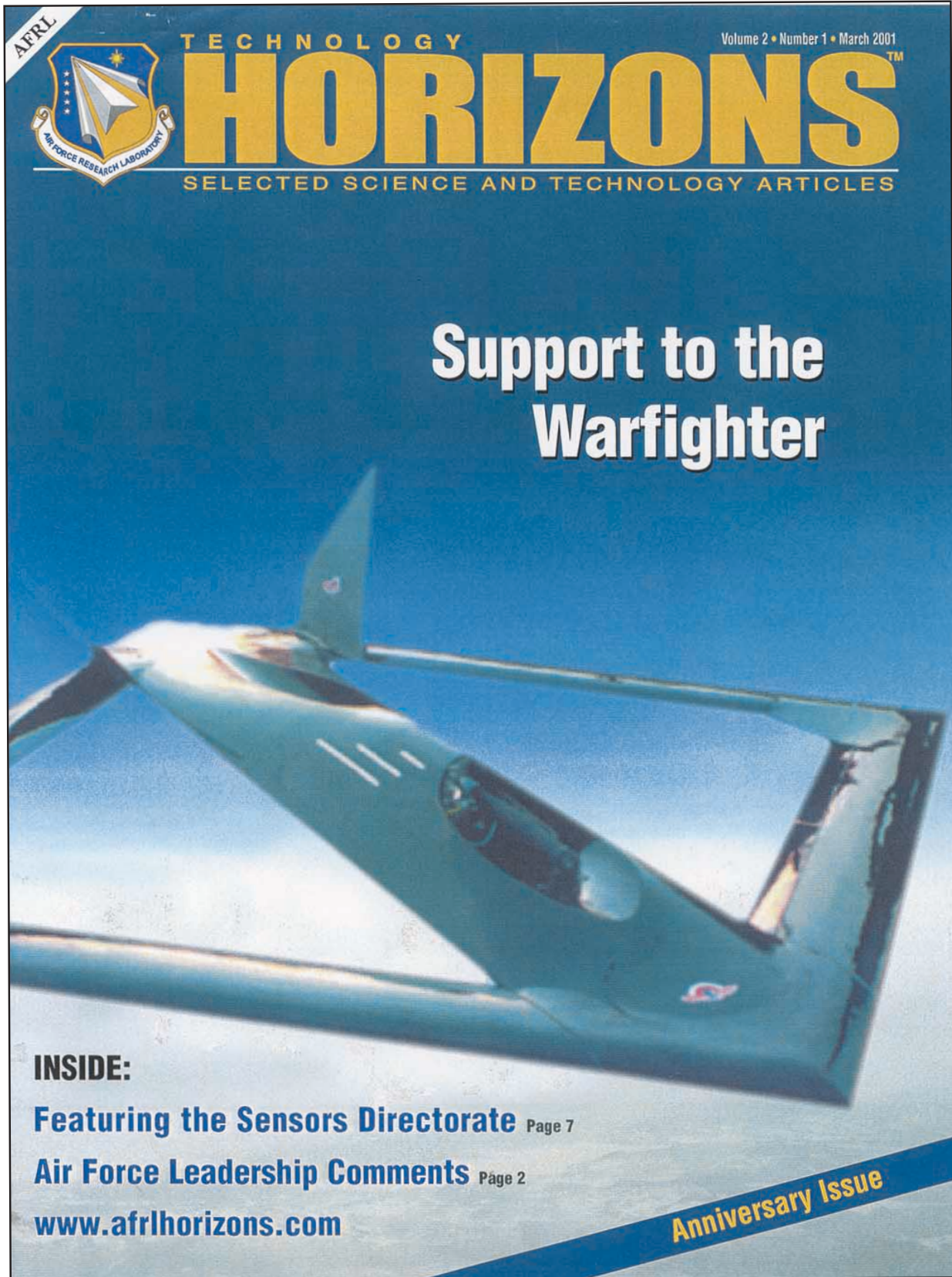



Figure G1

AIR FORCE TECHNOLOGY TRANSFER PROGRAM



Contact: Doug Blair
Air Force Program Manager
(937) 656-9176
douglas.blair@wpafb.af.mil
Air Force Research Laboratory
Technology Transfer Web Site:
<http://www.afrl.af.mil/techtran/index.htm>

Linking Technology with the Mission and Marketplace



Industry **Other Government Agencies**
↓
Academia

Mechanisms & Programs
CRADAs • Personnel Exchanges • PLAs
EPAs • CAs • Use of Facilities • CTAs •
SBIR • IR&D • DUS&T

Laboratory Resources
• Expertise • Facilities • Equipment • Technology

Air Force Partnership Intermediaries
• Gulf Coast Alliance for Technology Transfer (GCATT)
<http://www.gcatt.engr.ufl.edu/gcatt.htm>
• Wright Technology Network (WTN)
<http://www.wtn.org>
• New Mexico Tech
<http://www.nmt.edu/~ttsag>
• New York State Technology Enterprise Corporation
(NYSTEC) <http://www.nystec.com>

DoD Partnership Intermediary
• TechLink
<http://techlink.msu.montana.edu/>

Other Organizations
• Federal Laboratory Consortium (FLC)
<http://www.federalallabs.org/>
• United States Regional Technology Transfer Centers
(US RTTCs) <http://www.usrttc.org/>



AFRL VISION
*We defend America by unleashing
the power of innovative
aerospace technology*

AFRL MISSION
*Leading the discovery,
development, and integration
of affordable warfighting
technologies for
our aerospace forces*

Air Force Technology Transfer Strategies

- Integrate technology transfer into the acquisition strategy
- Identify technologies for commercial application
- Market resources and technologies
- Promote technology transfer training
- Share AF technology with the private and public sector

Contact Information:
TECH CONNECT
(800) 203-6451

Air Force Technology Transfer Program

Definition

The intentional communication (sharing) of knowledge, expertise, facilities, equipment, and other resources, for application to military and non-military systems.

Benefit to the Air Force

Opportunity to provide expertise

Opportunity to receive:

- Royalties
- In-kind services
- Share cost of research between the AF and industry
- Spin-on technologies



Benefit to the Partner

Use streamlined R&D collaborative procedures

Opportunity to commercialize results of Government R&D

Collaboration allows resource leveraging

Access to federal expertise and facilities



Laws

Bayh-Dole Act of 1980

Gave nonprofit organizations, universities and small businesses right to retain patents for technology developed using government funding

Stevenson-Wydler Technology Innovation Act of 1980

Established technology transfer as a mission of the federal government

Federal Technology Transfer Act of 1986

- Allowed labs to enter into Cooperative Research and Development Agreements (CRADAs) and negotiate licensing agreements
- Provided for royalty sharing
- Provided for the exchange of personnel, services and equipment

American Technology Preeminence Act of 1991

- Authorized Partnership Intermediaries
- Authorized Education Partnership Agreements (EPAs)

Technology Transfer and Improvement Act of 1995

Provided CRADA partner an option for an exclusive license

Mechanisms/Tools

Cooperative Research and Development Agreement (CRADA)

links a federal laboratory to a non-federal partner

Patent License Agreement (PLA) licenses the use of federally owned intellectual property

Education Partnership Agreement (EPA) links academic institutions with federal laboratories

Cooperative Agreement (CA) allows cost sharing between a federal laboratory and a non-federal partner

Commercial Test Agreement (CTA) allow non-federal use of federal test facilities

Partnership Intermediary (PI) is an agency of state/local government that assists small business firms in utilizing federal laboratory technology

Transferring Technologies That Support The Warfighter



**"The first essential of air power
is pre-eminence in research"
General H. H. Arnold, 1944**

Figure G2

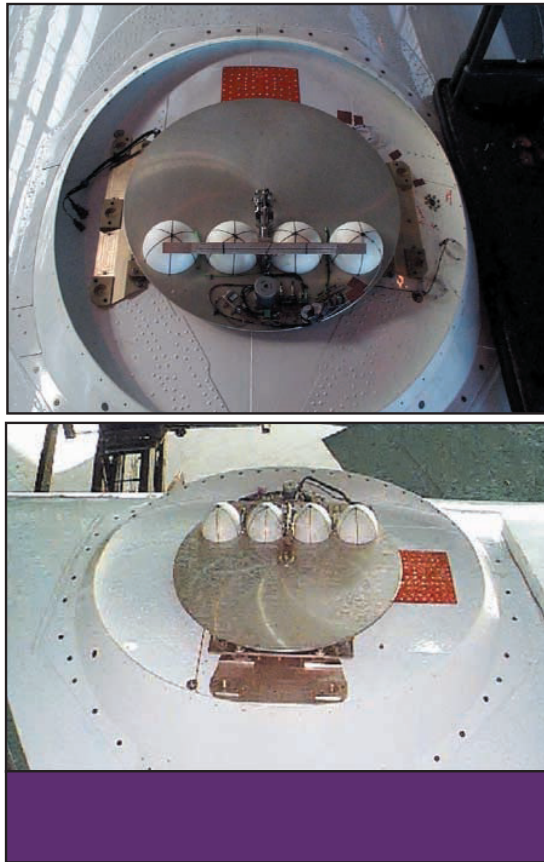


Air Force Research Laboratory | AFRL

Science and Technology for Tomorrow's Aerospace Forces

Success Story

AFRL SUCCESSFULLY DEMOS GLOBAL BROADCAST SERVICE/MILSTAR ANTENNA



A new satellite-receiving antenna, the Global Broadcast Service (GBS) / Milstar antenna, was successfully demonstrated in five separate test flights by the Information Directorate's Information Grid Division during March through August 1999.



Air Force Research Laboratory
Wright-Patterson AFB OH

Information Directorate
Support to the Warfighter

Accomplishment

Satellite-receiving antenna installations on airborne platforms must have a low profile to prevent drag. The antenna must also have excellent wide-angle scanning performance and good gain properties over the full range of motion. The GBS/Milstar airborne antenna is capable of satisfying these requirements and can produce a wide-angle mechanically scanned beam with relatively constant antenna gain over the scanned coverage area. The AFRL/IF Information Connectivity Branch developed a low cost 20 GHz receive airborne antenna for reception of data from both the GBS/Ultra High Frequency (UHF) follow-on (UFO) satellites and the Milstar satellites. The results of the five test flights gained the attention of the Office of the Secretary of Defense (OSD) who directed the JSTARS Office to employ the use of a GBS antenna to receive Unmanned Aerial Vehicles (UAV) information by way of the GBS down link.

Background

AFRL/IFG engineers worked with engineers from California-based Datron/Transco Inc, to develop a 6 inch high, 30 inch diameter Luneburg lens antenna. The array is made up of four Luneburg Lens hemispheres mounted on a reflective ground plane. The lens outputs are phased combined to provide an aperture with effectively the same gain for half the height of any mechanically steered array. The mechanically scanned antenna mounted atop an AFRL-owned C-135 satellite communications aircraft provides data rates up to 23.5 Mbps in flight, scans in elevation from 10 to 90 degrees and 360 degrees continuously in azimuth. The GBS/Milstar antenna's performance has been demonstrated while receiving data and video from a UFO-9 satellite. A total of 2.4 Kbps of data was received from a Milstar Satellite.

Additional information

To receive more information about this or other activities in Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTT, 1-800-203-6451 and you will be directed to the appropriate Laboratory expert. (00-IF-01)



Air Force Research Laboratory | AFRL

Science and Technology for Tomorrow's Aerospace Forces

Success Story

AFRL AND DARPA ADVANCE MOVING SURFACE TARGET TECHNOLOGY



Enemy tanks, small boats, and tactical ballistic missile transporters are being targeted by the Information Directorate and the Defense Advanced Research Projects Agency (DARPA) Special Projects Office through the affordable moving surface target engagement (AMSTE) program. Entering the second phase of research, the AMSTE program, funded by DARPA, is investigating and developing technologies to affordably engage moving surface targets.



Air Force Research Laboratory
Wright-Patterson AFB OH

Accomplishment

Scientists and engineers from the directorate's Information and Intelligence Exploitation Division explored technologies in the initial phase of AMSTE that would tightly network ground moving target indication (GMTI) sensors to provide fire-control-quality tracks of sufficient accuracy and direct inexpensive munitions against moving surface targets. The second phase of this program, AMSTE II, will consist of a series of experiments that investigate critical technologies, explore performance boundaries, and demonstrate potential operational utility. The focus of the research is to develop a new capability for the services to strike with precision, moving surface threats from long ranges and in all weather conditions. The program will focus on GMTI radar, a sensor that detects moving surface vehicles from long distances. The next phase of the program will feature airborne experimentation demonstrating precision fire control and weapon delivery with limited target association challenges. The FY02 experiment will feature airborne experimentation demonstrating integrated highly reliable track maintenance and precision fire control. Finally, the FY03 experiment will be an end-to-end demonstration of AMSTE engagement capabilities.

Background

Vehicles also tend to mix with other vehicles, travel within groups or convoys, start and stop often, and use terrain to block their detection. Several initial studies conducted over the past year investigated the feasibility of precision engagement of moving ground targets using advanced sensor systems. The results of these studies concluded that while obtaining the high accuracy required for precision fire control is possible.

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTT, (800) 203-6451 and you will be directed to the appropriate Laboratory expert. (00-IF-04)

Information
Emerging Technologies



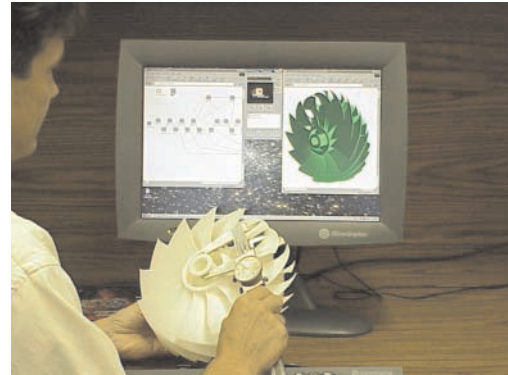
Modeling & Simulation and Virtual Manufacturing Processes

CRADA # 01-356-ML-01

AF Partner: Air Force Research Laboratory
Materials & Manufacturing Directorate
Manufacturing Technology Division

Partner: DaySys Incorporated
714 East Monument Avenue
Dayton, Ohio 45402

STATUS: OPEN



OBJECTIVE:

The objective of this effort is to provide virtual manufacturing applications technology transfer to commercial manufacturers using the world-class Air Force Product Affordability and Realization Testbed (PART) modeling, simulation (M&S) and virtual manufacturing facility.

BENEFIT:

TO AIR FORCE: Provides an additional distribution channel for the PART modeling and simulation capabilities, significantly improving the implementation of leading edge M&S tools for planning, design, analysis, management, and evaluation of manufacturing operations.

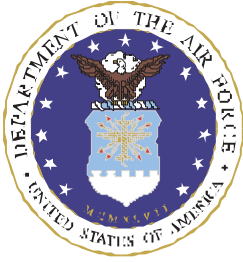
TO PARTNER: Gives DaySys access to extensive Air Force owned PART resources and increased visibility to a broader base of users. Capitalizes on existing M&S skills while providing the opportunity to sharpen them further. Provides a positive on-going revenue stream to both DaySys and the Air Force.

INFORMATION:

Virtual manufacturing (VM) uses models that are abstractions of reality that include only the components relevant to the problem being analyzed and simulation tools involving a graphical representation of a real system, product, or process. VM can reduce the risk associated with new products and processes and save time in the development and production phases of new systems. PART was established by ManTech to develop and utilize these tools and methods to model, simulate, and analyze weapon system manufacturing affordability and risk.

Gregory B. McGath AFRL/MLOP 255-5669

ASC/PA Clearance Number 01-0268



JASSM Warhead Development

CRADA # 00-018-MN-01

AF Partner: AFRL/MN
AAC/YV

Partner: Lockheed Martin Corporation
Integrated Systems
8529 South Park Circle
Orlando FL 32819

STATUS: CLOSED



OBJECTIVE

The objective of this agreement between LMIS, AFRL/MN, and AAC/YV is to determine the threshold of booster-to-main charge detonation transfer of the JASSM warhead design by measuring detonation velocity and witness plate markings during test.

BENEFIT

TO AIR FORCE: Enhanced knowledge and capability, and expansion of database, in conducting varidrive testing. Expanded knowledge of booster performance with new penetrator explosive. Access to test results, which will allow the government to optimize the future research and development of warheads, especially as related to warheads for advanced standoff weapons.

TO PARTNER: Further development and refinement of the design for an advanced warhead capable of being delivered by the JASSM platform. Knowledge gained about warhead booster to main charge design parameters for this application. Possible follow-on applications where the advanced warhead overcomes the limitation of other designs.

INFORMATION

The Air Force has historically pursued the development of munitions designed to support the warfighter with the greatest possible advantage in conflict. The AFRL/MN has researched many munition concepts designed to enhance this mission. One such concept is the application of standoff weapons systems.

Paulette M. Risher, AFRL/MNOB, 850-882-8591

31 January 2001

Approved for public release by AAC/PA on 14 April 2000 (00-110)